



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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In re application of :  
Tatsuhiko SHIBUYA et al. : Docket No.00774/98-129 TOK/US  
Serial No. 09/302,471 : Group Art Unit 1755  
Filed April 30, 1999 : Examiner D. Brunzman  
SILICA-BASED COATING FILM ON :  
SUBSTRATE AND COATING SOLUTION :  
THEREFOR :

THE COMMISSIONER IS AUTHORIZED  
TO CHARGE ANY DEFICIENCY IN THE  
FEE FOR THIS PAPER TO DEPOSIT  
ACCOUNT NO. 23-0971

RESPONSE

Assistant Commissioner for Patents,  
Washington, D.C.

Sir:

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This is in response to the Official Action dated August 22, 2001.

Favorable reconsideration is respectfully requested.

The claims are 7 and 10 to 15.

Claims 7 and 10 to 15 have been rejected under 35 USC 102(b) as being anticipated by Takei et al. (JP Kokai 9-208237) on the ground that the reference teaches a method of forming a coating composition and coating a substrate wherein 100 g of TMOS, 500 g of methanol, 360 g of DMF and 266 g of THF are admixed and, to this composition, are added an ammonium compound and water.

Further, claims 8 and 9 have been rejected under 35 USC 103(a) as being unpatentable over Takei above in view of Tomikawa et al.

These rejections are respectfully traversed.

(1) The rejection asserts that Takei discloses a method for forming a coating composition. However, Takei is directed to a method for the preparation of silica glass and not a coating composition. Example 1 of Takei in fact discloses that 4.5 kg of a silica sol solution were

taken portionwise in four 480 mm square vats and converted therein into silica gel, probably in the form of blocks or boards. No coating composition was prepared in this Example 1 as well as in Example 2 and Comparative Example 1.

(2) The silicon compound dissolved in a solvent in step (a) of present claims 7 and 10 to 12 is a polyalkoxy silane compound such as TMOS. On the other hand, the starting silicon compound dissolved in a solvent in the first approach of Takei's method is not such an alkoxysilane compound *per se* but rather a partial polycondensation product of a silicon alkoxide such as TMOS.

(3) The amount of water to be added to the polyalkoxy silane solution is 2 to 20 moles per mole of the silane (present claim 11). Assuming that the silane is tetramethoxy silicon (TMOS) having a molecular weight of 152, this molar proportion corresponds to the range of 36/152 to 360/152 by weight. On the other hand, Takei teaches that the concentration of water in the starting mixture must not exceed 1% by weight, clearly teaching away from a higher concentration of water (see section [0006] of the English translation of Takei of record).

(4) In present claims 7 and 10 to 12, the solvent in which the starting silicon compound is dissolved is an alcohol solvent while, in Example 1 of Takei, the starting silicon compound is dissolved in a mixture of methanol, DMF and tetrahydrofurfuryl alcohol (not THF, i.e. tetrahydrofuran).

(5) Instead of the non-use of an aprotic polar solvent such as DMF and THF in the starting solution in step (a) of present claims 7 and 10 to 12, the alcohol solvent in the solution is subsequently replaced with an aprotic polar solvent in step (c) while Takei gives not the slightest hint of such a step of solvent replacement.

Claims 13 to 15 can also never be anticipated by Takei since the claimed method involves the use of a coating solution prepared by the method of claim 7 which in itself is novel over the reference.

With regard to the rejection of claims 8 and 9 as being unpatentable over Takei et al. above in view of Tomikawa et al. (JP Kokai 6-83063), it is evident from the full English translation of Tomikawa of record that there is nothing in Tomikawa which overcomes the above-

discussed deficiencies of Takei. Further, it is not apparent why one of ordinary skill in the art would combine these references in view of their differing objections and further, it is not apparent why one would employ the amines of Tomikawa in the very different compositions of Takei.


For the foregoing reasons, it is apparent that the rejections on prior art are untenable and should be withdrawn.

No further issues remaining, allowance of this application is respectfully requested.

If the Examiner has any comments or proposals for expediting prosecution, please contact undersigned at the telephone number below.

Respectfully submitted,

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